CLAIMS

What is claimed is:

1. A method for coordinating predefined actions for at least two nodes, the method comprising:

generating at least two quantum-entangled particles;

defining at least two selectable actions at each of the nodes, a first one of the at least two selectable actions being identified by a first quantum state and a second one of the at least two quantum-entangled particles being identified by a second quantum state that is different than the first quantum state;

sending a respective one of the quantum-entangled particles to each of the at least two nodes;

detecting a state of a first one of the quantum-entangled particles at a first one of the nodes, whereby a state of each other of the quantum-entangled particles is fixed to the detected state of the first one of the quantum-entangled particles;

after detecting the state of the first one of the quantum-entangled particles, detecting the fixed state of a second one of the quantum entangled particles at a second one of the nodes; and

for at least one of the first and second nodes, selecting and performing one of the at least two predefined actions, in part, as a function the detected state of the quantum-entangled particles and the quantum-state identification of the predefined actions.

2. The method of claim 1, wherein selecting and performing one of the at least two predefined actions as a function the detected state of the quantum-entangled particles and the quantum-state identification of the predefined actions includes comparing the detected state to the quantum-state identifications and, in response to finding a matching state, performing the predefined actions identified by the matching state.

3. The method of claim 1, wherein selecting and performing one of the at least two predefined actions as a function the detected state of the quantum-entangled particles and the quantum-state identification of the predefined actions includes:

generating a pseudorandom code as a function of the detected state of the quantum-entangled particles; and

selecting and performing one of the at least two predefined actions as a function of the pseudorandom code.

4. The method of claim 3, wherein generating a pseudorandom code includes generating a substantially similar pseudorandom code at both of the first and second nodes.

5. The method of claim 4, further comprising storing characteristics of the pseudorandom code at the first and second nodes, wherein generating a pseudorandom code at both of the first and second nodes includes generating a pseudorandom code as a function of the stored characteristics and the detected state of quantum-entangled particles.

6. The method of claim 1, wherein generating at least two quantum-entangled particles includes generating quantum-entangled pairs of photons and wherein sending a respective one of the quantum-entangled particles to each of the at least two nodes includes sending a respective one of the photon pairs to each of the at least two nodes.

7. The method of claim 6, wherein generating quantum-entangled pairs of photons includes generating pairs of photons having consistent polarization and wherein selecting and performing one of the at least two predefined actions includes generating a result that is consistent for each node as a function of the polarization.

8. The method of claim 1, further comprising:

identifying an expected lifetime of the entangled state of the quantum-entangled particles; and

wherein detecting a state of a first one of the quantum-entangled particles and detecting the fixed state of a second one of the quantum-entangled particles includes detecting the states prior to the expected lifetime expiring.

9. The method of claim 1, further comprising:

regenerating the at least two quantum-entangled particles as a function of a predefined interval;

sending a respective one of the regenerated quantum-entangled particles to each of the at least two nodes; and

wherein detecting a state of a first one of the quantum-entangled particles and detecting the fixed state of a second one of the quantum-entangled particles include detecting the states of the regenerated quantum-entangled particles.

10. The method of claim 9, wherein regenerating the at least two quantum-entangled particles as a function of a predefined interval includes regenerating the at least two quantum-entangled particles when an expected lifetime of the entanglement of the quantum-entangled particles expires before the state of the first and second quantum-entangled particles is detected.

11. The method of claim 1, wherein defining at least two selectable actions includes defining two selectable actions at a first node, further comprising sending the two selectable actions to a second node and using the detected state of the quantum-entangled particles and the two selectable actions at the second node to audit the selection and performance of one of the two selectable actions at the first node.

12. The method of claim 1, wherein selecting and performing one of the at least two predefined actions includes independently selecting and performing one of the at least two predefined actions.

13. The method of claim 12, wherein independently selecting and performing one of the at least two predefined actions includes selecting and performing one of the at least two predefined actions at a first one of the nodes without communicating with other ones of the nodes after sending the respective one of the quantum-entangled particles to each of the at least two nodes.

14. The method of claim 1, wherein defining at least two selectable actions at each of the nodes includes defining at least two encryption functions at each of the nodes and

wherein selecting and performing one of the at least two predefined actions includes selecting and performing one of the at least two encryption functions.

15. A method for generating an output for at least two nodes, the method comprising:

generating at least two sets of quantum-entangled particles, each set including at least two quantum-entangled particles;

sending a respective one of each set of quantum-entangled particles to each of the at least two nodes;

for each set of quantum-entangled particles, detecting a state of a first one of the quantum-entangled particles at a first one of the nodes, whereby a state of each other of the quantum-entangled particles is fixed to the detected state of the first one of the quantum-entangled particles;

for each set of quantum-entangled particles, after detecting the state of the first one of the quantum-entangled particles, detecting the fixed state of a second one of the quantum entangled particles at a second one of the nodes; and

at each of the first and second nodes, generating an output as a function the detected states of the quantum-entangled particles from each set of quantum-entangled particles.

16. The method of claim 15, wherein generating an output as a function the detected states of the quantum-entangled particles from each set of quantum-entangled particles includes comparing the detected states of at least two quantum-entangled particles at each node and performing a first function in response to the detected states that match and performing a second function in response to the detected states that do not match.

17. The method of claim 15, wherein generating an output as a function the detected states of the quantum-entangled particles from each set of quantum-entangled particles includes generating at least two inputs as a function of the detected states and processing the inputs to generate the output.

18. The method of claim 17, further comprising defining an encoding function, wherein generating at least two inputs includes generating at least two bits for the

encoding function and wherein processing the inputs to generate the output includes processing the inputs with the encoding function to generate a coding output.

19. A method for coordinating timing of actions at first and second nodes, the method comprising:

generating at least two quantum-entangled particles;

sending a respective one of the quantum-entangled particles to each of the first and second nodes;

detecting a state of a first one of the quantum-entangled particles at the first node, whereby a state of each other of the quantum-entangled particles is fixed to the detected state of the first one of the quantum-entangled particles;

detecting a state of a second one of the quantum entangled particles at the second node after detecting the state of the first one of the quantum-entangled particles; and

at the first and second nodes, executing a response at a coordinated time selected as a function of the detected states of the quantum-entangled particles.

20. The method of claim 19, wherein executing a response at a coordinated time selected as a function of the detected states of the quantum-entangled particles includes, at each of the first and second nodes, processing the detected state to generate an output indicative of the coordinated time and viewable by a user.

21. A system for coordinating predefined actions for at least two nodes, the system comprising:

means for generating at least two quantum-entangled particles;

means for defining at least two selectable actions at each of the nodes, a first one of the at least two selectable actions being identified by a first quantum state and a second one of the at least two quantum-entangled particles being identified by a second quantum state that is different than the first quantum state;

means for sending a respective one of the quantum-entangled particles to each of the at least two nodes;

means for detecting a state of a first one of the quantum-entangled particles at a first one of the nodes, whereby a state of each other of the quantum-entangled particles is fixed to the detected state of the first one of the quantum-entangled particles;

after detecting the state of the first one of the quantum-entangled particles, means for detecting the fixed state of a second one of the quantum entangled particles at a second one of the nodes; and

for at least one of the first and second nodes, means for selecting and performing one of the at least two predefined actions as a function the detected state of the quantum-entangled particles and the quantum-state identification of the predefined actions.

22. A system for coordinating predefined actions for at least two nodes using at least two selectable actions, a first one of the at least two selectable actions being identified by a first quantum state and a second one of the at least two quantum-entangled particles being identified by a second quantum state that is different than the first quantum state, the system comprising:

an entangled particle generator adapted to generate at least two quantum-entangled particles;

a communications link adapted for sending a respective one of the quantum-entangled particles to each of the at least two nodes;

a particle detector adapted to detect a state of a first one of the quantum-entangled particles at a first one of the nodes, whereby a state of each other of the quantum-entangled particles is fixed to the detected state of the first one of the quantum-entangled particles;

another particle detector adapted to detect the fixed state of a second one of the quantum entangled particles at a second one of the nodes, after the state of the first one of the quantum-entangled particles is detected; and

for at least one of the first and second nodes, a selection arrangement adapted to select and facilitate the performance of one of the at least two predefined actions as a function the detected state of the quantum-entangled particles and the quantum-state identification of the predefined actions.